

NOTES ON BROMELIACEAE. I

Lyman B. Smith

This series is begun with the aim of providing names for new taxa and combinations whose publication would be unduly delayed otherwise. Abbreviations for herbaria follow standard practice.

COLOMBIA and ECUADOR

AECHMEA HOPPIL (Harms) L. B. Smith, comb. nov.
Streptocalyx hoppil Harms, Notizbl. 12: 526. 1935.

Pl. I, fig. 1: Sepal x 1; fig. 2: Petal x 1.

Type locality: On trees in dense forest, Archidona, Prov. Oriente, Ecuador, 900-1,000 meters. Type collected by W. Hopp (No. 1016).

COLOMBIA: PUTUMAYO: Uchupayaco, on the planada between Urcu-sique and Umbria on the banks of the Rio Uchupayaco, alt. 300 m., Feb. 22-23, 1942, R. E. Schultes 3368 (GH). Epiphyte, Rio San Miguel or Sucumbios, Conejo and vicinity, by the Quebrada Conejo, alt. 300 m., April 2-5, 1942, R. E. Schultes 3517 (GH). Epiphyte, Valley of Sibundoy, Sibundoy, alt. ca. 2,225-2,300 m., May 29, 1946, R. E. Schultes 6606a (US).

ECUADOR: NAPO-PASTAZA: Mera, April 17, 1940, Lugo 213 (S).

Harms described his Streptocalyx hoppil as having appendaged petals, thereby tacitly admitting that it was in the wrong genus. The type, which was presumably in Berlin, has not been seen but the collections by Schultes and that by Lugo from the type region agree closely with his detailed description.

ECUADOR

TILLANDSIA ZAMORENSIS L. B. Smith, sp. nov.

A T. duidae L. B. Smith, cui valde affinis, inflorescentia parva bipinnata, bracteis membranaceis differt.

Stemless; leaves to 45 cm. long, equaling the inflorescence, densely and minutely lepidote beneath, green; sheaths ovate, inconspicuous; blades ligulate, broadly acute and apiculate, flat, 3 cm. wide; scape erect, 3 mm. in diameter; scape-bracts imbricate and closely enfolding the scape, elliptic, acute, membranaceous, finely nerved, minutely lepidote toward the apex; inflorescence subdensely bipinnate, 20 cm. long; primary bracts ovate, 3 cm. long; spikes suberect, short-stipitate with 1 or 2 sterile bracts at base, lance-oblong, acute, strongly complanate, 7 cm. long, 15 mm. wide, densely 12-flowered; rachis flexuous, excavated; floral bracts more or less imbricate but narrow and not at all concealing the rachis, equaling the sepals, lance-oblong, acute, strongly carinate, thin, nerved, obscurely lepidote toward the apex; flowers short-pedicellate; sepals free, lance-oblong, acute, 15 mm. long, carinate, obscurely lepidote; petals imperfectly known, 4 mm. longer than

the sepals, yellowish rose (! Scolnik). Pl. I, fig. 3: Apex of leaf $\times \frac{1}{2}$; fig. 4: Primary bract and spike $\times \frac{1}{2}$; fig. 5: Sepal $\times 1$.

Type in the herbarium of the New York Botanical Garden, collected on the Gualaquiza route to the Rio Zamora, Province of Santiago-Zamora, Ecuador, altitude 850 meters, December 25, 1948, by Rosa Scolnik (No. 1500).

This species is based on a single plant and further collections are necessary to ascertain the value of the characters used to distinguish it from Tillandsia dudae.

PERU

GUZMANIA CRYPTANTHA L. B. Smith var. PAUCIFLORA L. B. Smith, var. nov.

A var. cryptantha fasciculis paucifloris, sepalis minoribus differt.

Inflorescence 15 cm. long exclusive of the lower primary bracts which attain 24 cm.; fascicles 4-flowered; sepals 15 mm. long, connate for 10 mm.

Type in the Museo de Historia Natural "Javier Prado", Lima, Peru, collected in subtropical forest, Carpish, ridge between Huanuco and Tingo Maria, altitude 2,800-2,900 meters, August 9, 1947, by R. Ferreyra (No. 2404).

PITCAIRNIA ASPLUNDII L. B. Smith, sp. nov.

P. densifloram Brongn. in systema Mezii proxima sed foliis subtus membrana alba e lepidibus formata vestitis, bracteis florigeris atro-rubentibus, sepalis oblongis, ovario $1/2$ infero differt.

Epiphytic (! Asplund); leaves (only one known), about 2 m. long, entire, petiolate, glabrous above, covered beneath with a fine white membrane of fused scales, the blade linear with a narrow median channel, caudate-acuminate, flat, 5 cm. wide; scape over 2 dm. long, 1 cm. in diameter, red (! Asplund), almost black when dry, finely brown-flocculose; upper scape-bracts broadly ovate, acuminate, exceeding the internodes, chartaceous, brown-flocculose; inflorescence simple, very densely cylindric, 23 cm. long, 3 cm. in diameter, brown-flocculose; floral bracts like the upper scape-bracts, erect, 5 cm. long, blackish red (! Asplund); flowers subsessile; sepals oblong, asymmetric, rounded and apiculate, 25 mm. long, ecarinate, subcoriaceous; petals curved-spreading, strongly zygomorphic, linear-spatulate, truncate, 7 cm. long, red, bearing a large entire scale at base; stamens included, anthers linear, 12 mm. long; ovary only about $1/2$ superior; ovules apiculate. Pl. I, fig. 6: Leaf $\times 1/20$; fig. 7: Flower $\times 1$; fig. 8: Sepal $\times 1$; fig. 9: Base of petal $\times 1$.

Type in the Riksmuseet at Stockholm, collected on the shore of a rivulet in forest, Tingo Maria, Province of Huanuco, Department of Huanuco, Peru, July 16, 1940, by E. Asplund (No.

12263).

PITCAIRNIA FERREYRAE L. B. Smith, sp. nov.

P. archeri L. B. Smith in systema Mezii proxima sed foliorum laminis multo brevioribus latioribusque, inflorescentia pauciflora, bracteis florigeris acutis tenuibus differt.

Caulescent; stem 1 cm. in diameter, covered with the remains of old leaf-sheaths; new leaves fasciculate on the apex of the stem, apparently dimorphic but only one type well preserved; sheaths broadly ovate, 3 cm. long, serrate, dark castaneous, covered with a membrane of coalesced buff scales; petiole 15 cm. long, 5 mm. wide, subsensely serrate with dark spreading spines 2-3 mm. long; blade broadly oblanceolate, acuminate, long-cuneate at base, 44 cm. long, exceeding the inflorescence, 10 cm. wide, flat, entire, glabrous above, minutely flocculose beneath; scape erect, 4 mm. in diameter, densely brown-flocculose; scape-bracts erect, imbricate, the upper ones lanceolate, acute, membranaceous; inflorescence simple, dense, 7 cm. long; floral bracts broadly ovate, acute, distinctly shorter than the sepals, membranaceous; flowers subsessile; sepals lanceolate, acute, strongly asymmetric, 26 mm. long, ecarinate, subcoriaceous, dark brown, brown-flocculose; only very young petals known, apparently naked; anthers linear, apiculate; ovary largely superior; ovules apparently ecaudate. Pl. I, fig. 10: Leaf x 1/20; fig. 11: Floral bract and flower x 1; fig. 12: Sepal x 1.

Type in the Museo de Historia Natural "Javier Prado", collected in tropical forest at Plantacion Margarita, near Divisoria, Province of Coronel Portillo, Department of Loreto, Peru, altitude 1,500-1,600 meters, August 14, 1946, by R. Ferreyra (No. 1044).

In habit, Pitcairnia ferreyrae closely resembles P. pulchella Mez of Ecuador, but because of its naked petals and short floral bracts it falls nearer to P. archeri in Mez's key in the Pflanzenreich.

PITCAIRNIA SUBULIFERA L. B. Smith, sp. nov.

P. recurvatam (Scheidw.) C. Koch in systema Mezii proxima sed apicibus foliorum crasse subulatis atris, laminis utrinque glabris, sepalis acuminatis, petalis nudis differt.

Flowering plant 2 m. high (! Asplund); leaves all ending in a stout pungent black subulus, dimorphic, some reduced to lance-elliptic sheaths, 26 cm. long, dark castaneous and densely but fugaciously brown-flocculose toward the base, other leaves about 1 m. long, subpetiolate, the blades linear, acuminate, 4 cm. wide, flat and without a distinct channel, glabrous; scape 15 mm. in diameter, fugaciously white-flocculose; lower scape-bracts foliaceous, the upper ovate, acuminate, 6-7 cm. long; inflorescence simple, densely cylindric, 27 cm. long, glabrous; floral bracts erect, triangular-ovate, acuminate, 5 cm. long, much exceeding the sepals, chartaceous, nerved; pedicels

distinct, 3 mm. long; sepals narrowly triangular, 22 mm. long, nerved, the posterior ones carinate; petals 5 cm. long, coiling-recurved at anthesis, green (! Asplund), naked; anthers linear, 12 mm. long; ovary $2/3$ superior; ovules caudate. Pl. I, fig. 13: Floral bract x 1; fig. 14: Sepal x 1.

Type in the Riksmuseet at Stockholm, collected on rock at Carpish, Province of Huanuco, Department of Huanuco, Peru, altitude 2,600 meters, August 16, 1940, by E. Asplund (No. 13163).

PITCAIRNIA UMBRATILIS L. B. Smith, sp. nov.

A P. brunnescente L. B. Smith, cui affinis, laminis foliorum angustioribus, scapi bracteis nervatis, bracteis florigeris angustis tenuibusque, sepalis minoribus differt.

Caulcescent, flowering shoot 7 dm. long; leaves 8 dm. long; sheath broadly ovate, 3 cm. long, coarsely sulcate, dark castaneous, finely brown-flocculose; petioles 1 cm. wide, whitish-flocculose beneath, pectinate-serrate with dark slender spines 5 mm. long; blade linear, acuminate with an apical subulus, 35 mm. wide with a very narrow median channel, entire, sparsely pale-flocculose beneath; scape about 1 cm. in diameter; scape-bracts erect, very densely imbricate, the lowest foliaceous, the succeeding ones losing the blade and then the petiole but enlarging the sheath, the highest elliptic, over 15 cm. long, pectinate-serrate with a stout dark subulate apex, strongly nerved; inflorescence simple, densely cylindric, 3 dm. long, brown-flocculose; floral bracts erect, all exceeding the sepals, serrulate, thin, nerved, the lowest broadly ovate, the others linear-lanceolate; pedicels slender, 6 mm. long; sepals narrowly triangular, 28 mm. long, ecarinate, nerved; petals curved at anthesis, 65 mm. long, naked, green (! Asplund); stamens included, anthers linear, 11 mm. long; ovary $3/4$ superior; ovules caudate. Pl. I, fig. 15: Leaf x $1/20$; fig. 16: Floral bract x 1; fig. 17: Sepal x 1.

Type in the Riksmuseet at Stockholm, collected in dense moist forest at Carpish, Province of Huanuco, Department of Huanuco, Peru, altitude 2,850 meters, August 15, 1940, by E. Asplund (No. 13162).

PUYA MEDICA L. B. Smith, sp. nov.

P. pauperam Mez in systema Mezii proxima sed bracteis amplioribus, grosse serratis, lepidotis, pedicellis brevibus, floribus majoribus, sepalis spinuloso-acuminatis differt.

Caulcescent, the stem 3 cm. in diameter; flowering shoot 25-37 cm. high; leaves many, rosulate at the end of the stem, to 20 cm. long; sheaths suborbicular, 25 mm. long, their apical third serrulate and densely lepidote; blades narrowly triangular, acuminate, 12 mm. wide, glabrous above, covered beneath with white appressed scales, laxly serrate with slender spreading spines 3 mm. long; scape erect, slender, densely white-flocculose; scape-bracts subfoliaceous, the upper ones with thin

roseate sheaths; inflorescence slenderly cylindrical with the apical third simple, 10-20 cm. long, 2-3 cm. in diameter; primary bracts triangular-ovate, acuminate, 3-4 cm. long, exceeding the few-flowered axillary branches, pectinate-serrate, subchartaceous, deep rose, covered with white appressed scales; floral bracts of the branches like the primary bracts, shorter than the sepals; pedicels distinct, to 3 mm. long; sepals lance-oblong with an acicular apex, 18-20 mm. long, carinate, densely white-flocculose; petals 34-40 mm. long, blue-green (! Cerrate).

Type in the U. S. National Herbarium, No. 2,100,007, collected in rocky montane rain forest, Aynin, near the bridge between Chiquian and Aquia, Province of Bolognesi, Department of Ancash, Peru, altitude 3,160 meters, April 23, 1952, by Emma Cerrate (No. 1333).

PERU: ANCASH: Province of Bolognesi, dry rocky ground, 4 km. below Chiquian, alt. 2,800-2,950 m., May 20, 1950, R. Ferreyra 7584 (US).

Cerrate notes that this plant is used as a remedy for pneumonia, hence the specific name. The species is strikingly like P. roezlii E. Morr. in its bracts and flowers, although easily distinguished by its small leaves and short flowering branches. It grows at about a thousand meters higher elevation than P. roezlii and may well represent an adaptation to more rigorous climate. Pl. II, fig. 1: Primary bract and axillary branch x 1; fig. 2: Sepal x 1.

PUYA PRATENSIS L. B. Smith, sp. nov.

P. humilem Mez simulans sed bracteis florigeris pectinato-serratis, sepalis majoribus, ellipticis, obtusis, ecarinatis differt.

Flowering plant 15-20 cm. high; leaves (only the upper ones known) about 2 dm. long; sheaths elliptic, 3 cm. long, serrulate, glabrous; blades narrowly triangular, rigid, pungent, 11 mm. wide, covered with cinereous appressed scales but becoming partly glabrous above, laxly armed with spreading red spines 3.5 mm. long; scape 1-2 cm. long, largely concealed by the leaves; scape-bracts foliaceous but only 5-6 cm. long; inflorescence simple, strobilate, ellipsoid, 9 cm. long, 3 cm. in diameter; floral bracts erect, imbricate, triangular-ovate, acuminate, 3 cm. long, much exceeding the sepals, pectinate-serrate, subcoriaceous, dark brown with a paler apex, bearing minute inconspicuous white stellate scales; pedicels stout, obconic, 5 mm. long; sepals elliptic, obtuse, 17 mm. long, ecarinate, dark brown when dry, lepidote; petals naked, elliptic-oblong, obtuse, 25 mm. long, blue-green (! Ferreyra). Pl. II, fig. 3: Floral bract and flower x 1; fig. 4: Sepal x 1.

Type in the Museo de Historia Natural "Javier Prado", collected in grassland, steppes of Cumbre Gavilan, above Cajamarca, Province of Cajamarca, Department of Cajamarca, Peru, altitude 3,100 meters, August 17, 1952, by R. Ferreyra (No. 8580).

TILLANDSIA CHARTACEA L. B. Smith var. PERUVIANA L. B. Smith, var. nov.

A var. chartacea omnibus partibus minoribus, spicis laxioribus et bracteis florigeris rhachin haud omnino obtegentibus differt.

Leaves 25-30 cm. long; spikes subdense; floral bracts imbricate but not wholly concealing the rhachis; sepals 16 mm. long, the posterior ones connate for 9 mm.

Type in the U. S. National Herbarium, No. 2,100,002, collected on subxerophytic slopes, Timoc, 4 km. below Chiquian, Province of Bolognesi, Department of Ancash, Peru, altitude 2,500 meters, August 3, 1949, by Emma Cerrate (No. 454).

PERU: ANCASH: Province of Bolognesi, rocky clay soil of montane rain forest, alt. 3,200-3,300 m., Aug. 6, 1949, E. Cerrate 307 (US).

TILLANDSIA CONFINIS L. B. Smith, sp. nov.

T. minorem Mez & Sodiro in systema Mezii proxima sed foliorum laminis supra mox glabris, scapi vaginis strictis, sepalis duplo majoribus differt.

Epiphytic, stemless, 47 cm. high; leaves many in an infundibuliform rosette, 35 cm. long; sheaths ample, elliptic, to 13 cm. long, inconspicuously punctulate-lepidote, smooth and sublustrous, pale green spotted with dark purple especially on the inner face; blades straight, narrowly triangular, acuminate, 25 mm. wide, covered beneath with minute appressed cinereous scales, soon glabrous above; scape probably erect, slender, glabrous; scape-bracts strict, imbricate, subfoliaceous, the upper ones with red sheaths; inflorescence laxly bipinnate, 21 cm. long; primary bracts broadly ovate, much shorter than the axillary spikes, the lower ones caudate, the upper apiculate; spikes spreading, linear-lanceolate, 10 cm. long, probably about 15 mm. wide at anthesis, strongly complanate, 10-flowered with 2-3 sterile bracts at the base; floral bracts strongly imbricate and undoubtedly concealing the rhachis at anthesis, lance-oblong, acute, sharply carinate, 24 mm. long, exceeding the sepals, even, lustrous, glabrous or nearly so; pedicels 1 mm. long; sepals linear, acute, 22 mm. long with the posterior ones connate for 13 mm., keeled, nerved, subchartaceous, sparsely lepidote with minute appressed brown scales; petals and stamens unknown; capsule slenderly cylindric, beaked, 27 mm. long. Pl. II, fig. 5: Leaf x 1/10; fig. 6: Primary bract and spike x 1/2; fig. 7: Posterior sepals x 1.

Type in the Museo de Historia Natural "Javier Prado", collected in tropical forest at Divisoria, between Tingo Maria and Pucallpa, Province of Coronel Portillo, Department of Loreto, Peru, altitude 1,500-1,600 meters, February 28, 1947, by R. Ferreyra (No. 1686).

VRIESIA LOPEZII L. B. Smith, sp. nov.

A V. barclayana (Baker) L. B. Smith, cui affinis, vaginis

foliorum indistinctis, inflorescentia gracillima tereti, bracteis florigeris tenuibus nervatis glabris differt.

Flowering plant 7 dm. high; leaves erect, 4 dm. long, covered with gray subappressed scales; sheaths very small and inconspicuous; blades linear-triangular, filiform-acuminate, 2 cm. wide; scape erect, 4 mm. in diameter, glabrous; scape-bracts erect, imbricate, elliptic, the lower ones lepidote and with a short foliaceous blade, the upper ones obtuse and glabrous; inflorescence simple, terets, 3 dm. long, 7 mm. in diameter, glabrous; rhachis broadly winged and enfolding the bases of the flowers; floral bracts like the upper scape-bracts, 3 cm. long, imbricate, exceeding the sepals, ecarinate, thin, nerved, green with purplish apices; pedicels obconic, 4 mm. long; sepals lanceolate, acute, 23 mm. long, ecarinate, thin, petals 35 mm. long, the blades elliptic, purple, the claw bearing 2 large oblong acute scales; stamens exerted. Pl. II, fig. 8; Plant x 1/10; fig. 9: Sepal x 1; fig. 10: Petal x 1.

Type in the U. S. National Herbarium, No. 2,100,204, collected at Samne-Casminche, Province of Trujillo, Department of La Libertad, Peru, altitude 1,800 meters, May 21, 1952, by A. Lopez M. (No. 846).